

## WHAT IS CLAIMED IS:

1. A timing generator of a flat panel display for generating a PAC (polarity arrangement control) signal and sending the same to a data driver so that the data driver is operative to control a polarity of display data based on the PAC signal and send the display data to a display panel, the timing generator comprising:

a storage unit for storing a plurality of sets of polarity data and a plurality of PAC signals wherein each set of polarity data includes a plurality of data polarities and each set of polarity data corresponds to one of the PAC signals;

an operation unit for receiving the display data, the plurality of sets of polarity data, and a corresponding one of the PAC signals so that the operation unit is operative to perform an inner product operation with respect to the polarity data of each set of polarity data and the display data for obtaining a sum of a plurality of coupling voltages corresponding to the polarity data of each set of polarity data; and

a comparison unit for comparing the sum of coupling voltages with a predetermined value, and outputting the PAC signal if the sum of coupling voltages is smaller than a pre-determined value.

2. The timing generator as claimed in claim 1, wherein the output PAC signal corresponds to the sum of coupling voltages of the polarity data smaller than a pre-determined value.

3. The timing generator as claimed in claim 1, wherein the output PAC signal corresponds to the polarity data having a smallest sum of

coupling voltages if the sum of coupling voltages of each polarity data is larger than the predetermined value.

4. The timing generator as claimed in claim 1, wherein the operation unit comprises an adder for performing an inner product operation with respect to each set of polarity data.

5. The timing generator as claimed in claim 1, further comprising a polarity inverting unit for inverting a polarity of display data of the data driver.

6. A timing generator of a panel display for generating a PAC (polarity arrangement control) signal and sending the same to a data driver so that the data driver is operative to control a polarity of display data based on the PAC signal and send the display data to a display panel, the timing generator comprising:

a storage unit for storing a plurality of sets of polarity data and a plurality of PAC signals wherein each set of polarity data includes a plurality of data polarities and each set of polarity data corresponds to one of the PAC signals;

an operation unit for receiving the display data, the plurality of sets of polarity data, and a corresponding one of the PAC signals so that the operation unit is operative to perform an inner product operation with respect to each set of polarity data and the display data for obtaining a sum of coupling voltages corresponding to the polarity data; and

a comparison unit for comparing the sums of coupling voltages each other for selecting a smallest sum of coupling voltages, and outputting a

corresponding one of the PAC signals to the data driver.

7. The timing generator as claimed in claim 6, wherein the output PAC signal corresponds to the polarity data having the smallest sum of coupling voltages.

5        8. The timing generator as claimed in claim 6, wherein the operation unit comprises an adder for performing an inner product operation with respect to each set of polarity data.

9. The timing generator as claimed in claim 6, further comprising a polarity inverting unit for inverting a polarity of display data of the data  
10 driver.

10. A method of generating PAC (polarity arrangement control) signal, comprising the steps of:

receiving display data, at least one set of predetermined polarity data, and at least one PAC signal corresponding to the at least one set of PAC  
15 data;

performing an inner product operation with respect to the at least one set of PAC data and the display data for obtaining a sum of at least one coupling voltage;

comparing the sum of at least one coupling voltage with a  
20 predetermined value; and

outputting the PAC signal of polarity data corresponding to the sum of at least one coupling voltage if the sum of at least one coupling voltage is smaller than the predetermined value.

11. The method as claimed in claim 10, further comprising the step of

outputting the PAC signal having a smallest sum of at least one coupling voltage if all the sums of at least one coupling voltage are larger than the pre-determined value after the comparison step.

12. A method of generating PAC (polarity arrangement control) signal,

5 comprising the steps of:

receiving display data, at least one set of predetermined polarity data, and at least one PAC signal corresponding to the at least one set of PAC data;

10 performing an inner product operation with respect to each set of polarity data and the display data for obtaining a sum of a plurality of coupling voltages corresponding to the at least one set of polarity data;

comparing the sums of coupling voltages each other for selecting a smallest sum of coupling voltages; and

15 outputting a corresponding PAC signal having the smallest sum of coupling voltages.